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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/625,873	07/26/2000	Robert Wallace	CX099034	8383

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MOTOROLA, INC.
1303 EAST ALGONQUIN ROAD
IL01/3RD
SCHAUMBURG, IL 60196

EXAMINER	
SHELEHEDA, JAMES R	
ART UNIT	**PAPER NUMBER**
2614	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/625,873	WALLACE, ROBERT	
	Examiner	Art Unit	
	James Sheleheda	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 July 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-8* is/are allowed.

6)☒ Claim(s) *9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ohishi et al. (Ohishi) (6,480,551) (of record), in view of Mann et al. (Mann) (5,862,312) (of record) and Conforti (

As to claim 9, Ohishi discloses a method of providing a fault tolerant headend system (Fig. 1; transmitting device, 12; column 1, lines 8-21) comprising:

connecting a plurality of adjacent headend elements (Fig. 13; signal processors, 72-1 to 73), to a series of switching devices (Fig. 13; 74-1 to 74-N) wherein at least one of said headend elements is a spare headend element (signal processor, 73; column 12, lines 36-37);

detecting a fault in one of said headend elements (column 13, lines 20-26);

shifting headend elements, comprising:

configuring a headend element (signal processor, 73) adjacent to said fault detected headend element (any of processors, 72-1 to 72-N) to take over functioning of said fault detected headend element (column 12, lines 66-67 and column 13, lines 1-10); and

changing a state of a specific switching device (one of switches 74-1 to 74-N) to connect said adjacent headend element to an output cable of said fault detected headend element (column 12, lines 66-67 and column 13, lines 1-10).

While Ohishi discloses wherein the adjacent headend element is the spare headend element, wherein the spare headend element is capable of taking over functioning of at least one adjacent headend element and shifting the spare headend element until it is connected to the output cable,

he fails to specifically disclose wherein each headend element is capable of taking over functioning of at least one adjacent headend element and performing said steps of shifting headend elements in the direction of the spare headend element, until the spare is connected to an output cable and refreshing said failed element to serve as a new spare element.

In an analogous art, Mann discloses a video delivery system (column 14, lines 12-14) employing a plurality of video systems (Fig. 13; 134, 136 and 150) wherein each video system is capable of taking over function of an adjacent video system (column 15, lines 10-20) and wherein when a fault is detected (column 15, lines 49-54 and lines 6-10) the video systems are shifted in the direction of the spare video system (column 15, lines 1-16) until the spare is outputting a video feed (column 15, lines 1-16) for the benefit of monitoring and automatically replacing failed processors (column 15, lines 49-54).

Additionaly, in an analogous art, Conforti discloses a data transmission system (Fig. 1; column 1, lines 7-10) containing an active processor and a backup processor

(column 2, lines 7-14) wherein if a fault is found in the active processor the backup processor becomes active and the previously active processor is then configured to serve as the standby processor (column 2, lines 11-17). This configuration limits interruptions to the communications system by only switching processors upon the detection of a fault the currently active processor.

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Ohishi's system to include wherein each headend element is capable of taking over functioning of at least one adjacent headend element and performing said steps of shifting headend elements in the direction of the spare headend element, until the spare is connected to an output cable, as taught by Mann, to ensure uninterrupted output by monitoring and automatically compensating for failed processors in a fault tolerant video distribution system.

Additionally, it would have been obvious to one of ordinary skill in the art at the time of invention by applicant to modify Ohishi and Mann's system to include refreshing said failed element to serve as a new spare element, as taught by Conforti, to ensure the limiting of interruptions to the communications system by switching out processors only upon the detection of a fault in the currently active processors in a cable television fault tolerant system.

Response to Arguments

3. Applicant's arguments filed 07/12/04 towards claim 9 have been fully considered but they are not persuasive.

In response to applicant's argument on page 8, paragraph 1, that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

The combination of Mann with Ohishi provides the obvious benefits, suggest by Mann, of monitoring and **automatically** replacing failed processors (see Mann at column 15, lines 49-54).

The examiner further finds that refreshing a faulted processer to serve as a backup (as taught by Conforti) would provide obvious benefits, as previously indicated in the rejection above, of reducing the need to interrupt the system and constantly switch between the active and backup processors. Reducing the number of times components are switched out is an obvious benefit of Conforti's suggested system.

Allowable Subject Matter

4. The following is a statement of reasons for the indication of allowable subject matter:

Claims 1-6 are allowable because the prior art fails to teach or disclose a fault tolerant headend system comprising: at least two headend elements, a first headend element and an adjacent headend element;

at least one switching device having an output port capable of connecting to an input port connected to said first headend element and another input port is connected to said adjacent headend element;

wherein said output is connectable to an ouput cable;

wherein said adjacent headend element is capable of taking over functioning of said first headend element; and

at least one of said headend elements is a spare headend element,

wherein said first headend element includes state information for both said first headend element and said adjacent headend element in storage located within said first headend element, said state information accessible by said adjacent headend element.

Claim 7 is allowable because the prior art fails to teach or disclose a fault tolerant headend system comprising: at least two headend elements, a first headend element and an adjacent headend element;

at least one switching device having an output port capable of connecting to an input port connected to said first headend element and another input port is connected to said adjacent headend element;

wherein said output is connectable to an ouput cable;

wherein said adjacent headend element is capable of taking over funcationing of said first headend element; and

at least one of said headend elements is a spare headend element,

wherein said plurality of headend elements are arranged in a row,

wherein if one headend element fails, said switching devices shift at least one headend so that **only** a headend adjacent to said failed headend element takes over for said failed headend element; and said spare headend element **only** takes over for a headend element adjacent to said spare headend element.

Claim 8 is allowable because the prior art fails to teach or disclose a fault tolerant headend system comprising: at least two headend elements, a first headend element and an adjacent headend element;

connecting a plurality of adjacent headend elements to a series of switching devices wherein at least one of said headend elements is a spare headend element and wherein each headend element is capable of taking over functioning of at least one adjacent headend element;

detecting a fault in one of said headend elements;

shifting headend elements, comprising:

configuring a headend element adjacent to said fault detected headend element to take over functioning of said fault detected headend element; and

changing a state of a specific switching device to connect said adjacent headend element to an output cable of said fault detected headend element; and

performing said steps of shifting headend elements in the direction of a spare headend element until the spare element is connected to an output cable,

wherein each of said plurality of headend elements includes state information only for itself and its immediately adjacent headend elements.

5. A background search found similar prior art, however, not completely as claimed. For example, Ohishi et al. (6,480,551) discloses a system of a plurality of headend elements arranged in a row, with a spare element capable of taking over functions of any of the elements. Ohishi fails, however, to disclose wherein a headend element includes state information for both itself and an adjacent headend element and wherein the spare headend element **only** takes over for an adjacent element.

Mann et al. (5,862,312) discloses a system which will switch "round robin" through headend elements until a spare element is reached. Mann fails, however, to disclose wherein a headend element includes state information for both itself and an adjacent headend element and wherein the spare headend element **only** takes over for an adjacent element.

Mahalingam et al. (6,052,733) storing state information for a headend element and replacing a faulted element with a spare. Mahalingam fails, however, to disclose wherein a headend element includes state information for both itself and an adjacent

headend element and wherein the spare headend element **only** takes over for an adjacent element.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

Certificate of Mailing

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to:

Commissioner for Patents

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on _____.
(Date)

Typed or printed name of person signing this certificate:

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I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office, Fax No. (703)_____ - _____ on _____.
(Date)

Typed or printed name of person signing this certificate:

_____

Signature: _____

Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Sheleheda whose telephone number is (703) 305-8722. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (703) 305-4795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James Sheleheda
Patent Examiner
Art Unit 2614

JS

JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600